
NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION

NASA-16135 (June 2004)
NASA
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SECTION 16135

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06/04

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SECTION 16135

CABLE TRAYS
06/04

NOTE: Delete, revise, or add to the text in this section to cover project requirements. Notes are for designer information and will not appear in the final project specification.

This section covers materials and installation of cable-tray systems.

Contract drawings should indicate the extent and general arrangement of the cables, equipment, and distribution systems and should indicate cable-tray supports.

PART 1 GENERAL

1.1 REFERENCES

NOTE: The following references should not be manually edited except to add new references. References not used in the text will automatically be deleted from this section of the project specification.

The publications listed below form a part of this section to the extent referenced:

ASTM INTERNATIONAL (ASTM)

ASTM A 1008/A 1008M	(2004) Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
ASTM A 123/A 123M	(2002) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2002) National Electrical Code
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1.2 GENERAL REQUIREMENTS

NOTE: If Section 16003 GENERAL ELECTRICAL PROVISIONS is not included in the project specification, applicable requirements therefore should be inserted and the following paragraph deleted.

Section 16003 GENERAL ELECTRICAL PROVISIONS applies to work specified in this section.

1.3 SUBMITTALS

NOTE: Review submittal description (SD) definitions in Section 01330 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control. Include a columnar list of appropriate products and tests beneath each submittal description.

The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES in sufficient detail to show full compliance with the specification:

SD-02 Shop Drawings

Fabrication Drawings
Installation Drawings

SD-03 Product Data

Manufacturer's product data shall be submitted for the following items:

Cable Trays
Supports

SD-08 Manufacturer's Instructions

Manufacturer's instructions shall be submitted for cable trays in accordance with paragraph entitled, "Manufacturer's Instructions," of this section.

PART 2 PRODUCTS

2.1 CABLE TRAYS

[Ladder cable trays shall consist of two longitudinal side members connected by individual transverse members.]

[Trough cable trays shall consist of continuous one-piece ventilated-bottom sections contained within longitudinal side members.]

[Channel cable trays shall consist of one-piece ventilated channel sections.]

[Solid bottom trays shall consist of two longitudinal side members connected by one-piece bottom section.]

2.2 MATERIAL AND FABRICATION

Cable trays shall be [high-strength corrosion-resistant aluminum Alloy No. 5052-H32] [steel sheet in accordance with ASTM A 1008/A 1008M with a zinc coating applied after fabrication].

Steel trays shall be hot-dipped galvanized finish in accordance with ASTM A 123/A 123M.

Fabrication drawings shall be submitted for cable trays consisting of fabrication and assembly details to be performed in the factory.

Prior to assembly, contact surfaces of trays shall be coated with an antioxidant compound. Edges, fittings, and hardware shall be finished free from burrs and sharp edges. Cable trays shall include splice and end plates, dropouts, and miscellaneous hardware.

2.3 SUPPORTS

Supports and hangers shall permit both vertical and horizontal adjustment, where possible. Horizontal and vertical tray supports shall provide an adequate bearing surface for the tray and shall have provisions for holddown clamps or fasteners. Vertical tray supports shall provide a secure means other than friction for fastening cable trays to supports.

Cable trays shall be supported at not more than [6] [_____] -foot [1800] [_____] millimeter intervals. Supports for horizontal-elbow tray fittings shall be placed within [2] [_____] feet [600] [_____] millimeter of each fitting extremity and as recommended by the cable-tray manufacturer.

When supported at [6] [_____] -foot [1800] [_____] millimeter intervals, the cable trays shall be capable of carrying not less than [150] [_____] pounds per linear foot [225] [_____] kilogram per meter. Tray fittings shall have not less than the load-carrying ability of straight tray sections and shall have the manufacturer's minimum standard radius.

PART 3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

Manufacturer's instructions shall be submitted for Cable Trays including special provisions required to install equipment components and system packages. Special notices shall detail impedances, hazards and safety precautions.

3.2 INSTALLATION DRAWINGS

[Thirty] [_____] calendar days prior to shipment, installation drawings shall be submitted to the Contracting officer for approval. Drawings shall be coordinated with all other work in the immediate area that could come in conflict with the installation. Drawings shall include layout of cable tray work, including details of both horizontal and vertical supports. Both horizontal and vertical supports shall be as specified in paragraph

entitled, "Supports," of this section.

3.3 GROUNDING

Cable trays shall be properly grounded by means of a low-resistance conductor of sufficient capacity, but in no case smaller than No. 1/0 AWG copper . Grounding conductor shall be bonded to cable-tray sections and fittings by compatible bolted connections. Effective grounding shall be permanent and continuous with an impedance sufficiently low to limit the potential above ground and to facilitate operation of overcurrent devices in the circuit. Grounding and bonding cable trays shall be in accordance with NFPA 70.

-- End of Section --